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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,846	08/22/2003	Se Jun Heo	1670.1013	8145

49455 7590 10/31/2006

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EXAMINER	
SANTIAGO, MARICELI	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/645,846	HEO ET AL.	
	Examiner	Art Unit	
	Mariceli Santiago	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-17 and 20-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,6-8,10,11,17,20,22 and 23* is/are rejected.

7)☒ Claim(s) *5,9,12-16,21,24 and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 21, 2006 has been entered.

Response to Amendment

The Amendment, filed on August 21, 2006, has been entered and acknowledged by the Examiner.

Cancellation of claims 2, 3, 18 and 19 has been entered.

Claims 1, 4-17 and 20-25 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 6-8, 10, 11, 17, 20, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Codama et al. (US 6,307,3 17) in view of Miyaguchi et al. (US 6,297,589).

Regarding claims 1, 17 and 22, Codama discloses an EL device and a method of making the same, comprising a substrate (1), a first electrode unit comprising first electrodes (5) formed on the substrate, first electrode terminals (not shown but required to drive the display,

Column 1, lines 39-43) connected to the respective first electrodes, a second electrode unit comprising second electrodes (4) formed over the first electrodes (see Figs. 2 and 3), and second electrode terminals (2, 3) connected to the respective second electrodes, an emission area formed where the first electrodes intersect the second electrode, an EL layer (7) disposed between the first electrodes and the second electrodes in the emission area, an inter insulating layer (6, layer contacting left side of electrode 5 in Fig. 3) provided under the EL layer and covering a space between each of the plurality of lines of the first electrodes and an edge portion of a top surface of each of the plurality of lines of the first electrodes, and an outer insulating layer (6, layer contacting right side of electrode 5 in Fig. 3) between the emission area and the second electrode terminals, wherein the outer insulating layer comprises an insulating material formed to contact at least an edge of the second electrode terminals facing the emission area to reduced a steepness of a step between the second electrode terminals and the substrate (Fig. 3).

Codama fails to explicitly exemplify the limitation of the first electrodes formed as a plurality of parallel evenly spaced lines and the second electrodes extending in an orthogonal direction with respect to the first electrodes. However, in the same field of endeavor, Miyaguchi discloses an EL device further comprising an electrode configuration comprised of a first electrode unit including first electrodes (R1) formed as a plurality of parallel evenly spaced lines on the substrate, and a second electrode unit including second electrodes (L1) formed in an orthogonal direction with respect to the first electrodes over the first electrodes (Column 2, lines 49-62), and exemplifies the provision of an insulating layer at the edges of the first electrodes. Furthermore the disclosed electrode configuration allows for the provision of pixel regions where the first and second electrodes intersect. One of ordinary skills in the art would reasonable contemplate at the time the invention was made the modification of the shape of the first

electrode unit to include a plurality of parallel evenly spaced lines and the second electrodes extending in an orthogonal direction with respect to the first electrodes, as an obvious matter of design engineering as exemplified by Miyaguchi since applicant's claimed first and second electrodes configuration does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teaching applied. Both Codama and Miyaguchi references exemplify the provision of an insulating layer covering the exposed edges of the plurality of first electrodes (see Fig. 3 of Codama and Fig. 2A of Miyaguchi). Moreover, one skilled in the art would reasonable expect applicant's invention to perform equally well with either the island-shaped first electrodes configuration disclosed by Codama or the first electrode configuration disclosed by Miyaguchi since both arrangements perform the same function of providing light emitting regions or pixel units at the intersection of the first and second electrodes. Accordingly, it would have been an obvious matter of design engineering to modify the device of Codama in view of Miyaguchi to obtain the invention as specified in claim 1.

Regarding claim 4, Codama discloses the substrate comprising glass or plastic (Column 8, lines 29-35).

Regarding claim 6, Codama discloses wherein the first electrode terminals are integrally formed with the first electrodes (Fig. 3, lines 47-60).

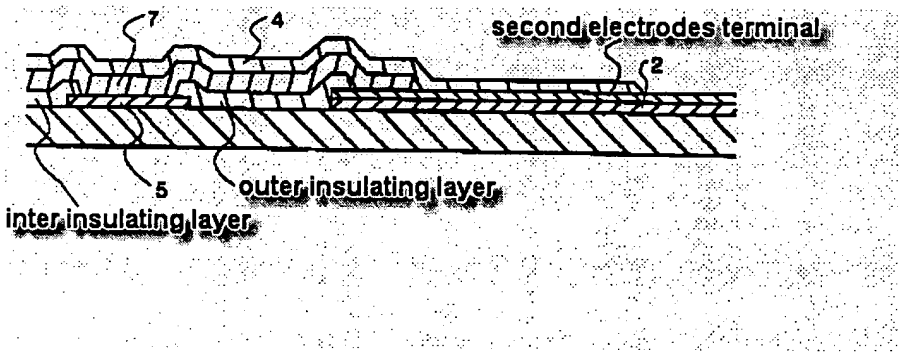
Regarding claims 7, 8, 20 and 23, Codama discloses the outer insulating layer covering at least an edge (right edge) of the first electrode closest to the second electrode terminal covered by the outer insulating layer and the edge of each of the second electrode terminals facing the emission area (Fig. 3).

Regarding claims 10 and 11, Codama discloses the second electrode passing over the outer insulating layer to contact the second electrode terminals (Fig. 3).

Response to Arguments

Applicant's arguments filed August 21, 2006 have been fully considered but they are not persuasive.

In regards to the rejection of claims 1, 4, 7, 8, 10, 11, 17, 20, 22 and 23, Applicant's contention that the prior art references to Codama '317 in view of Miyaguchi '589 fail to teach or suggest singly or in combination the claimed invention since there is no reason or motivation for one skilled in the art to incorporate the feature of Miyaguchi feature into an electrode structure of Codama, when doing so would undoubtedly undermine or defeat the very purpose of Codama, is not found persuasive. Codama discloses an EL device (see Figure below) further comprising a first electrode unit comprising first electrodes (5) formed on the substrate, a second electrode unit comprising second electrodes (4) formed over the first electrodes, an inter insulating layer (layer contacting left side of electrode 5 in Figure) provided under the EL layer and covering a space between each of the plurality first electrodes (5) and an edge portion of a top surface of each of the plurality of first electrodes (5), and an outer insulating layer (6, layer contacting right side of electrode 5 in Figure) between the emission area and the second electrode terminals, wherein the outer insulating layer comprises an insulating material formed to contact at least an edge of the second electrode terminals facing the emission area.



It is noticed that the outer insulating layer of Codama's is construed by extending the inter insulating layer outward from the outermost first electrode toward the second electrode

terminals. Codama exemplifies a plurality of evenly spaced island-shaped first electrodes intersecting the plurality of second electrodes, instead of a plurality of parallel evenly spaced lines arranged orthogonal to the plurality of second electrodes as claimed. In the same field of endeavor, Miyaguchi discloses an organic EL display further comprising an electrode arrangement comprising a plurality of first electrode of parallel evenly spaced lines arranged orthogonal to a plurality of second electrodes. Miyaguchi further discloses an inter insulating layer covering the edges of the first electrodes similar to the inter insulating layer of Codama in order to prevent undesired current flow into the organic EL layer. One skilled in the art would reasonable contemplate modification of the plurality of first electrodes disclosed by Codama to incorporate a plurality of parallel evenly spaced lines arrangement as taught by Miyaguchi as an obvious matter of design engineering, since the electrode arrangements of both Codama and Miyaguchi perform the same function of providing the light emitting regions or pixel units at the intersection of the plurality of first and second electrodes. Moreover, both Codama and Miyaguchi teach covering the first electrode edges by providing an inter-insulating layer in order to prevent undesirable current flow.

Allowable Subject Matter

Claims 5, 9, 12-16, 21, 24 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 5, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 5, and specifically comprising the limitation of

each of the second electrode terminals comprises a first terminal portion made of indium tin oxide (ITO), and a second terminal portion made of chrome (Cr)

Regarding claims 9 and 24, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 9 and 21, and specifically comprising the limitation of via holes formed at portions of the outer insulating layer covering the edge of the second electrode terminals, so that the second electrodes and the second electrode terminals are electrically connected to each other, respectively, through the via holes.

Regarding claims 12, 21 and 25, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 12, 21 and 25, and specifically comprising the limitation of a first buffer layer insulated from the first electrodes and the second electrode terminals, wherein the first buffer layer is formed between the outer insulating layer and the substrate.

Regarding claims 13-14, claims 13-14 are allowable for the reasons given in claim 12 because of their dependency status from claim 12.

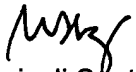
Regarding claims 15-16, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 15-16, and specifically comprising the limitation of a second buffer layer provided over a top surface of the substrate, wherein the second buffer layer maintains smoothness of the top face of the substrate, and prevents impurities from being introduced from the substrate.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mariceli Santiago
Primary Examiner
Art Unit 2879